DEPARTMENT OF HEALTH AND HOSPITALS

OFFICE OF AGING AND ADULT SERVICES

2009 ANNUAL MORTALITY REPORT

APRIL 2010

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EXECUTIVE SUMMARY

The Office of Aging and Adult Services (OAAS) has been charged with ongoing monitoring and trending of deaths in the population receiving home- and community-based services through OAAS. The purpose of this activity is to identify patterns and systematic problems. The information from these Mortality Reviews will allow OAAS to initiate quality improvements in the services provided.

For each death reviewed, OAAS obtained data and records relevant to the circumstances and causes of the death. The data were reviewed for patterns and systematic problems related to service delivery. This Annual Mortality Report contains aggregate information and quality improvements recommended to and initiated by OAAS.

This is OAAS' first Annual Mortality Report. It begins with a description of the populations served. All populations have a disability that impairs activities of daily living and are lower income adults. Most have multiple chronic illnesses, are over 50 years old, and lack sufficient family support to meet their needs. They all want to live in their community.

Annualized mortality rates were estimated from data collected from state databases about deaths between January 1, 2009 and June 30, 2009. These mortality rates were calculated for each of the home- and community-based services (HCBS) programs. Mortality rates were also calculated for other, standard demographic variables. The causes of death were also obtained and analyzed. Provider-specific remediation and reporting are under development.

Noteworthy findings were: Demographic patterns of mortality were generally as expected. The age at death matched the population served. The gender and ethnicity reflected known patterns. There was no disparity based on rural location. The top ten causes of death were consistent with CDC data for the USA and Louisiana. However, there were findings that need additional investigation or monitoring. Specific findings that warrant in-depth analysis include:

- The differences in program-specific mortality rates.
- The gender-specific mortality rate of the Adult Day Health Care.
- The variation in regional mortality rates.
- The accident and suicide rates were unexpectedly low compared to the general population.

These findings may be part of the normal variation over time, or may represent systematic issues that require attention. Further analyses will clarify these specific findings.

Actions taken by OAAS include the refinement of our procedure for these Mortality Reviews as well as increasing the organizational capacity to obtain, analyze, interpret, and act on findings. In the future, risk profiles will be developed beginning with data from Critical Incident Reports, as well as data about frailty, medical complexity, service utilization, and other social determinates of health. These risk profiles will alert the service delivery system that a client may be or becoming high-risk. In addition, OAAS has been authorized to fundamentally revise the home- and community-based services offered in Louisiana. The new service package, the Community Choices waiver, will expand the scope and improve the quality of services delivered to older adults and those with adult-onset disabilities.

Introduction

This report includes information and data concerning individuals served by the Office of Aging and Adult Services (OAAS) in the Department of Health and Hospitals (DHH). home- and community-based services (HCBS) provided through OAAS include four programs: The Program for All-Inclusive Care for the Elderly (PACE), the Elderly and Disabled Adult waiver (EDA), the Adult Day Health Care waiver (ADHC), and the Long-Term Personal Care Services (LT-PCS) which is a Medicaid state plan option. All participants who died during the review period from January 1, 2009 to June 30, 2009 are included in this annual report.

The population of people who receive HCBS are more frail than the general population of aging adults. By federal regulation, their disability must be severe enough to warrant admission into a nursing facility. This population also has multiple chronic conditions with functional impairments and frequently have cognitive impairments as well. They have lower incomes and often lack social support from their family and community. These medical and social determinates contribute to a higher mortality rate for older adults in HCBS.

Mortality Review within OAAS HCBS Services

Act No. 345 of the 2009 Legislative Session recommended mortality reviews by OAAS and ensured access to coroner's records as well as other critical documentation needed to conduct a Mortality Review. This Review enables systemic improvements in the quality of home- and community-based supports and services that are delivered. The legislation also mandated this annual public report.

The purpose of the Mortality Review is to monitor and analyze deaths of persons receiving HCBS through OAAS. The review of individual deaths and provider remediation is conducted as a separate and ongoing quality improvement activity within OAAS and is not reported here. This report uses data from various databases maintained by DHH including Medicaid claims and reports about incidents such as falls and illnesses. After identifying patterns and system-wide problems, a multidisciplinary Mortality Review Committee (MRC) will then recommend evidence-based corrective actions for both provider remediation and quality improvement activities. The MRC also publishes this annual public report on its findings and activities.

This report contains aggregate information regarding what was discovered, what corrections were taken and what quality improvement activities have been initiated. Confidentiality is strictly protected. No protected health information is included in this report and all participants have been completely de-identified. The identities of all providers of services are also protected.

Overview of Populations Served by Home- and Community-Based Services

This is the first Mortality Report published by OAAS and therefore only contains data for deaths that occurred between January 1, 2009 to June 30, 2009.

This first section describes the HCBS population in a general way. Following this section, the rates, trends and patterns of the mortality data for each HCBS population will be described.

A total of approximately 12,856 people had access to long-term care services through OAAS in four HCBS programs. The ADHC waiver served an average of 721 individuals, or 6% of the HCBS population. The EDA waiver averaged 3,545 individuals which is 27% of the population. The LT-PCS program averaged 8,681 individuals (67%). See Figure 1. During the review period, the Program for All-Inclusive Care for the Elderly (PACE) served 127 people which is less than 1%. The number of people in each program is the basis for all mortality rates in this report. The rest of this section describes the characteristics of each population served by OAAS.

Figure 2 shows the age distribution of the population served in the three larger HCBS programs. PACE is not shown. The average age was 73 years old, but there was a sharp drop in people served over 90 years old.

Figure 3 shows the number of males and females in the population served by the 3 larger HCBS programs. In aging populations, women generally outnumber men, but the LT-PCS shows an unexpectedly high difference between men and women who are 76.9% of the LT-PCS population. According to the 2007 Annual Medicaid Report, the Louisiana Medicaid program has 58.2% women while the general population in Louisiana has 51.5% women.

Figure 1 -- Population Served

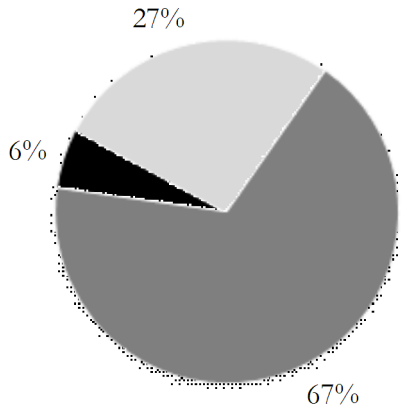


Figure 2 -- Population by Age Group

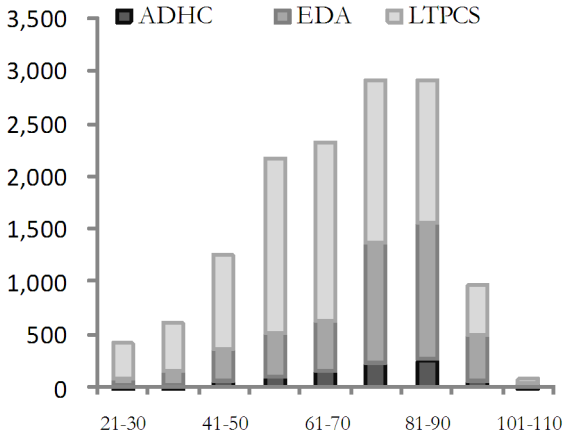
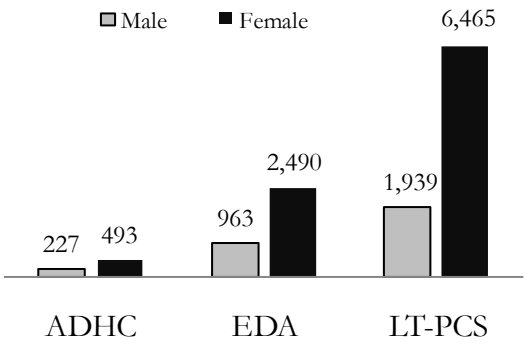


Figure 3 -- OAAS Programs by Gender



Overview of OAAS HCBS Population

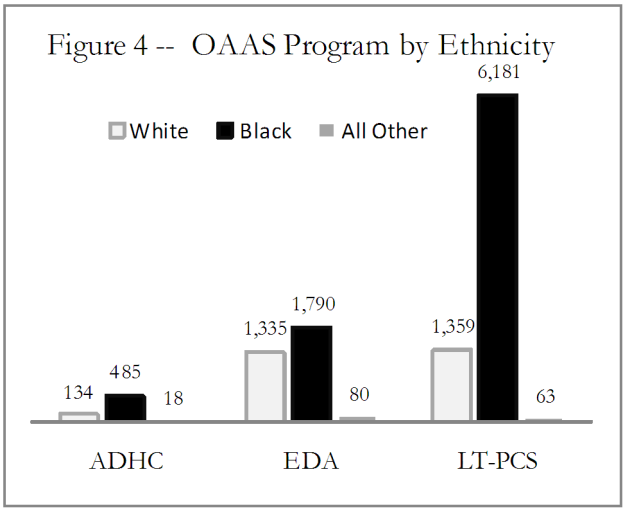
Figure 4 shows the number of whites, blacks ,and other ethnicities in the population served by the 3 larger HCBS programs.

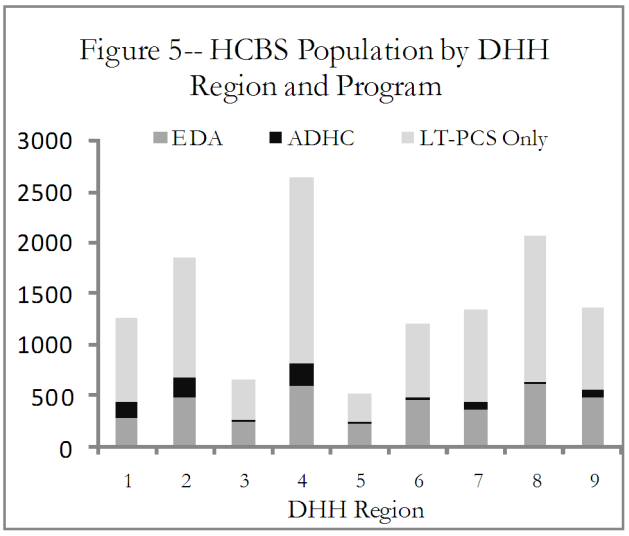
Again, LT-PCS shows significantly more African American participants in the population than other HCBS programs.

Populations Served by Region

The number of people served in each of the 4 HCBS programs by DHH region is shown in Figure 5. The regional variation reflects the demand for HCBS services in each region of Louisiana, but is also a reflection of several administrative factors.

Thus, the regional distribution of the HCBS population is not driven by population density alone. The DHH regions with the highest population densities are not the same as the DHH regions with the largest number of HCBS participants, or visa versa. The HCBS population distribution is also caused by a number of complex policies as well as provider capacity.





DHH Regions

Region 1— Greater New Orleans
Region 2 — Greater Baton Rouge
Region 3— Southeastern Coastal / Bayou
Region 4— Greater Lafayette
Region 5— Southwestern Coastal / Lake Charles
Region 6— Central Louisiana / Alexandria
Region 7— Northwestern Louisiana / Shreveport
Region 8— Northeastern Louisiana / Monroe
Region 9— North Shore

Mortality Rates for HCBS, Louisiana and the United States

The annualized home- and community-based services mortality rates per thousand participants for the 6-month period of January 1, 2009 through June 30, 2009 are shown below for the 2 waiver programs, PACE, all 4 HCBS programs and then for nursing facilities. The most current data for annual mortality rates are also shown for both Louisiana and the United States in Table 1 below.

Throughout this report, the semi-annual HCBS mortality rates have been converted to estimate the rate for an entire calendar year, because this first report only includes 6 months of data. The remainder of 2009 is calculated from the actual rates from the first 6 months of 2009. Annualized mortality rates must be viewed with caution because, while these represent the best methods and data possible, they are estimates. Subsequent Mortality Reports will contain actual data for the entire year.

For an inexact, overall comparison of mortality rates, Table 1 shows that the annual crude mortality rate for all people over 65 years old in Louisiana was 50.5 per thousand and nationwide was 47.2 per thousand in 2005 (NHCS, 2006; CDC, 2007). For all ages, the United States 2006 crude mortality rate was 8.5 per thousand and the Louisiana 2007 Mortality Rate 9.8 per thousand. Across all ages, the general population in Louisiana dies at a higher rate than the general population of the United States. Note that these tables contain the most recent data, but show different years, populations and settings which limits valid comparisons.

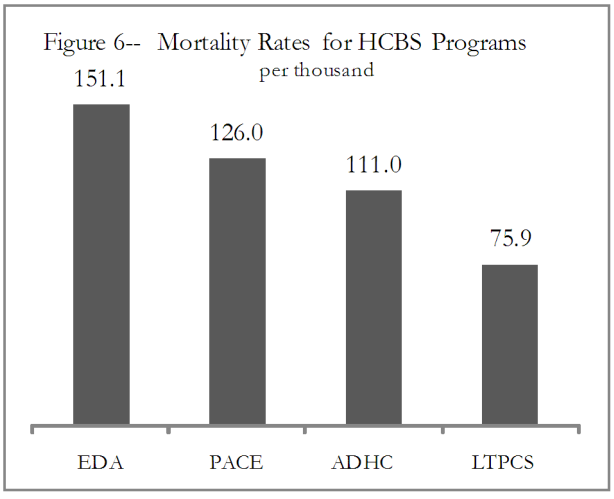
Table 1- Comparison of Mortality Rates

	Deaths	Mortality Rate (per 1,000)
EDA and ADHC waivers	301	144.2
PACE	< 10	126.0
HCBS (includes LT-PCS)	628	97.3
Nursing Facilities	2,621	247.6
Louisiana **over 65**	26,409	50.5
USA **over 65**	1,759,423	47.2

Analysis of OAAS HCBS Mortality

This section contains aggregate data on the deaths of individuals who received services in one of the Office of Aging and Adult Services' Programs between January 1, 2009 and June 30, 2009. An analysis of previous years was completed to provide baseline trend data (see the Appendix).

Figure 6-- Mortality Rates for HCBS Programs per thousand



Mortality Rates by HCBS Program

During the 6-month review period, 628 deaths were recorded in the DHH databases.

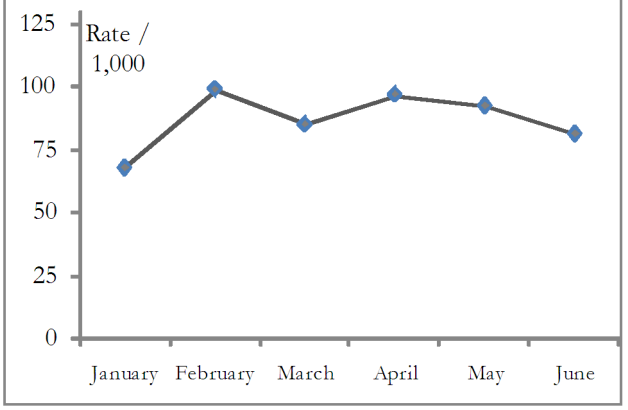
The annualized mortality rate for participants served by HCBS programs is shown in Figure 6. The programs are ranked according to mortality rate. The EDA waiver had 261 deaths out of 3,454 people; PACE had 8 deaths out of 127 people; ADHC had 40 deaths out of 721 people, and LT-PCS (without supplemental waiver services) had 319 deaths out of 8,681 people.

Analysis of OAAS HCBS Mortality

HCBS Mortality by Month

Figure 7 shows the monthly mortality rate for the HCBS programs. In this case, the data cover only the 6 month period shown. As expected, the chart shows the increase in mortality associated with the flu season. There are no other spikes in the death rate that would indicate an underlying cause for concern. The next annual report will show data for a full year.

Figure 7-- HCBS Monthly Mortality Rate



HCBS Mortality by Age

Tables 2 and 3 show the USA and Louisiana mortality rates for 3 standard age groups. As expected, the number of deaths and the mortality rate tends to increase as age increases. The age groups for the population served in HCBS are shown in Figure 2 on page 6.

Figure 8 shows the expected pattern that exists between the annualized mortality rate and the age of the person at death within the HCBS programs for the period of January 1, 2009 to June 30, 2009. The mortality rate increases with age in HCBS also.

The mean age at death for individuals participating in the HCBS programs is 73.2. For the USA, life expectancy is 77.7 years.

Figure 8 -- Mortality by Age Group

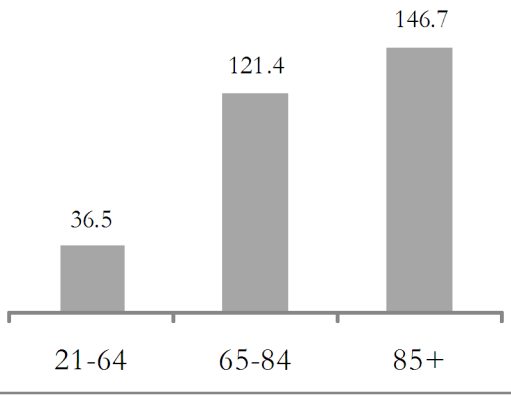


Table 2 – USA Mortality Rates
CDC Compressed Mortality Data 2006

Age Group	Count	Population	Crude Rate Per 1,000
65-74 years	390,093	18,916,844	20.6
75-84 years	667,338	13,046,691	51.1
85+ years	701,992	5,296,817	132.5
Total	**1,759,423**	**37,260,352**	**47.2**

Table 3 – Louisiana Mortality Rates
CDC Compressed Mortality Data 2006

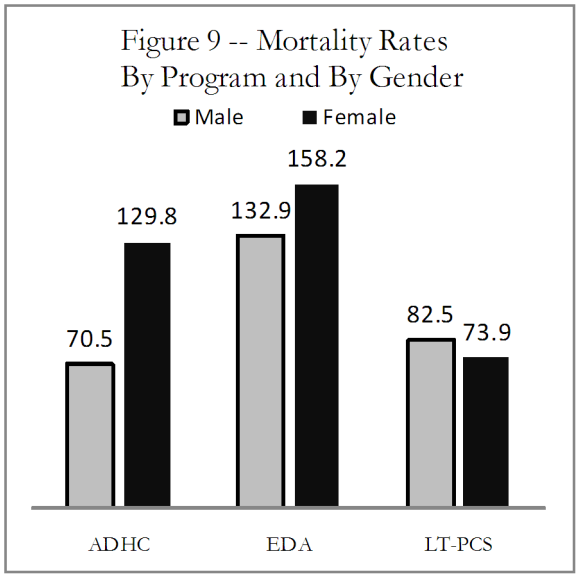
Age Group	Count	Population	Crude Rate Per 1,000
65-74 years	6,994	273,777	25.5
75-84 years	10,379	178,091	58.3
85+ years	9,036	99,422	136.0
Total	**26,409**	**518,290**	**51.0**

Analysis of OAAS HCBS Mortality

HCBS Mortality by Gender

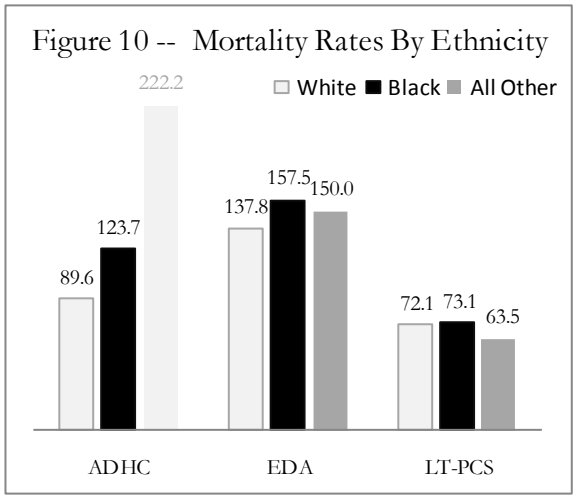
The annualized rates for males and females who died while participating in HCBS programs for the time period of January 1, 2009 to June 30, 2009 are shown in Figure 9.

The ADHC program showed significant difference in mortality between men and women. This differential mortality may be random variation, but will be evaluated by analyzing the monthly mortality rates over several years. In the general population, women continue to live 5.1 years longer than men (NVSS, 2009).



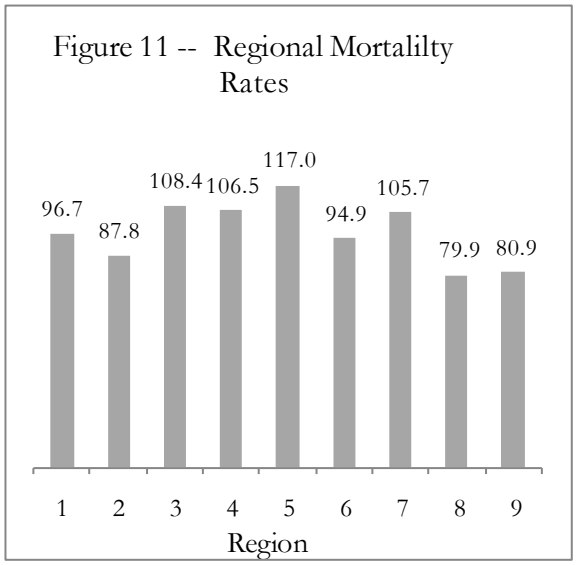
HCBS Mortality by Ethnicity

The annualized rates for whites, blacks, and other ethnicities who died while participating in waiver programs for the 6 month time period are shown in Figure 10. The high mortality rate for 'All Other' ethnicities in the ADHC program (light grey bar) is not reliable because there were less than 5 people who died. In the general population, whites continue to live 5.0 years longer than blacks (NVSS, 2009).



HCBS Mortality by DHH Region

The annualized HCBS mortality rates by DHH region of the state are shown in Figure 11 for the periods January 1, 2009 to June 30, 2009. There is evidence of significant regional variation across the state which is not associated with population or service density.



HCBS Mortality by Rural and Urban Classification

The annualized mortality rates for urban and rural participants who died while participating in HCBS programs for the time period of January 1, 2009 to June 30, 2009 were 99.7 and 92.3 per thousand respectively. There was no significant difference in mortality rate based on population density.

Analysis of OAAS HCBS Mortality

Diagnoses at Death in the United States, Louisiana, and HCBS Programs

In regard to medical diagnoses at the time of death, individual claims data were summarized and analyzed for International Classification of Disease (ICD) diagnosis codes. While not necessarily the cause of death, these other diagnoses illustrate the frailty of the HCBS population and the number of participants who have multiple chronic diseases. Figure 12 show that only 22% of those who died had a single diagnosis listed prior to death.

Most participants had many co-morbid conditions. 78% had more than 2 co-morbid conditions, and 25% had more than 22 conditions listed in their Medicaid insurance claims at the time of death.

For example, upon review of the Elderly And Disabled Adult (EDA) waiver, kidney disease was the most common diagnosis in the claims data for individuals who died during the 6 month review period. Stroke, respiratory disease, accidents and fractures, and heart disease were the next most common diagnoses for those people who died while in the EDA program during this 6 month period (see Figure 13).

Figure 12-- Percent with Multiple ICD Codes

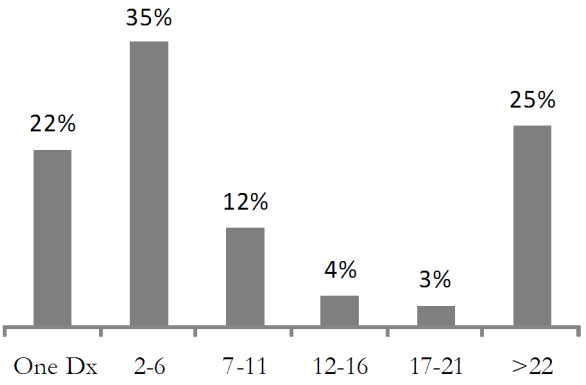
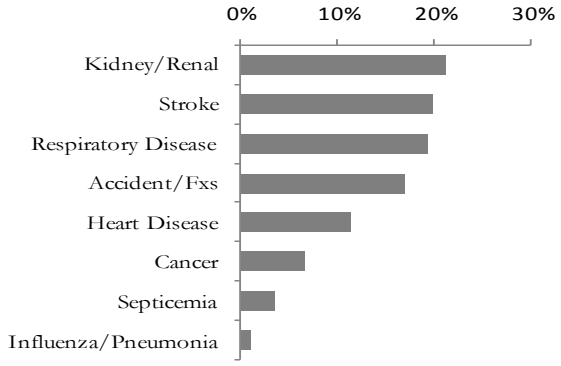


Figure 13-- Diagnoses at Death



Analysis of OAAS HCBS Mortality

Diagnoses at Death in the United States, Louisiana, and OAAS Programs

The age-adjusted, leading causes of death for the USA and Louisiana are shown below next to the leading causes of death in OAAS HCBS programs. For the USA, heart disease, cancer, and stroke remain the top three leading causes of death, but the trend has been decreasing over the long-term for all 3. Recently, there were unexpected increases for injuries and kidney disease.

In Louisiana, the pattern for causes of death are similar to the overall United States. For HCBS populations, respiratory disease is a more common cause of death as is diabetes and renal disease. Accidents are less common cause of death.

For people participating in a HCBS program during the period of January 1, 2009 to June 30, 2009, the cause of death was collected from 492 coroner's reports. Access to the electronic records collected by DHH Center for Health Statistics and the CDC allowed OAAS to analyze causes of death for 85% of those who died during the 6 month period.

For this subset of the HCBS population, renal disease and overwhelming septic infections are more common while accidents are less common causes of death. The priorities for medical intervention are consistently shown to be heart disease, cancer, and stroke.

Table 4- Leading Causes of Death

Rank	United States 2004	Louisiana 2004	HCBS 2009
1	Heart Disease 27.2%	Heart Disease 26%	Heart Disease 34%
2	Cancer 23.1%	Cancer 22%	Cancer 23%
3	Stroke 6.3%	Stroke 6%	Stroke 8%
4	Respiratory Disease 5.1%	Accidents 5.1%	Respiratory Disease 8%
5	Accidents 4.7%	Diabetes 4.1%	Diabetes 6.10%
6	Diabetes 3.1%	Respiratory Disease 3.9%	Renal/Kidney 4%
7	Alzheimer's Disease 2.8%	Alzheimer's Disease 3.2%	Alzheimer's Disease 2.9%
8	Influenza/ Pneumonia 1.8%	Renal/ Kidney 2.7%	Septicemia 2%
9	Renal / Kidney 1.4%	Influenza/ Pneumonia 2.2%	Influenza/ Pneumonia 2%
10	Septicemia 1.4%	Septicemia 2%	Accident 1%

Analysis of OAAS HCBS Mortality

Risk Profiles

So far, this report has examined the population served as well as the patterns and trends of mortality. This section begins to build a risk profile. To explore the issue of risk, OAAS reviewed Critical Incidents Reports (CIRs) that were submitted from around the state. The CIRs were submitted just EDA and ADHC waiver participants. For just these two waiver populations, 301 people died during the 6 month period. The fatality rates for selected reported events are shown in Table 6. It shows that the Online Incident Tracking System data shows that, 102 deaths were associated with the 643 people who had multiple reports of major illness before they died. Similarly, of the 389 falls reported during the 6 month period, 13 were associated with deaths. The fatality rate of each of the reported conditions indicates which of these events should be reviewed further as potential risk factors. However, in a few CIRs, the number of deaths is quite small, which prevents a statistical conclusion with just these data.

Clarification of several issues will increase the predictive value of the possible risk factors listed in this table. For example, clearly defining terms and look back intervals will help build a complete risk profile. By identifying the events with high-fatality rates such as multiple reports of illness, OAAS will build and adjust risk profiles. Risk profiles are useful for identifying participants who will probably benefit from more intensive care planning and other interventions.

Table 6- Percent of Deaths that are Associated with Critical Incident Reports.

Critical Incident Report	Number of CIRs	Number of Deaths	Percent Deaths for Reported Event
Multiple Illness	643	102	15.9%
Multiple Reports	1,121	144	12.8%
Protective Services Referral	69	5	10.4%
Major Injury	89	9	10.1%
Fall	389	13	3.3%
Law Enforcement Referral	73	3	4.1%
Medication Error	22	0	0.0%
Baseline Fatality Rate	2,223	225	10.1%

Currently, the service package in HCBS programs support functional impairments. The programs support activities of daily living (ADLs) such as dressing, bathing, eating and other occasional activities such as visits to health care providers. Many of the CIRs listed above are outside the scope of supports provided with the current service packages. Note that OAAS is proposing a new service package for HCBS services, the Community Choices waiver, but more services alone will not guarantee lower risks.

CONCLUSION

The 2009 Annual Mortality Report, the first annual report from the Office of Aging and Adult Services, represents a major effort to improve the quality of Medicaid-funded supports and services for older people who are living in Louisiana's communities. Using best practices from around the United States and standard data analyses, this report summarizes patterns and trends among those recipients of home- and community-based services who died between January 1, 2009 and June 30, 2009.

The results show that participants in HCBS programs have a higher mortality rate as would be expected. The data also show significant differences in mortality by HCBS program, month of the year, age group, gender, ethnicity, and DHH region of the state. There are several, likely hypotheses that explain why the differences in mortality are seen among the HCBS programs and populations based on known characteristics. They are more medically and socially fragile than older adults in the general population. Most of these differences in mortality rate are expected and follow patterns found in the general population in the United States and in Louisiana. The causes of death are also generally as expected.

However, there were findings that will require additional investigation or monitoring. Specifically, there are differences in program-specific mortality rates, gender-specific mortality rate of the ADHC program, and variation in regional mortality rates. Also, the accident and suicide rates seem low when compared to national data. These findings may be part of the normal variation over time, or may represent systematic issues that require attention.

Once additional data are analyzed, age adjustments, and acuity adjustments will clarify these findings. Further work will be done to support and prove these hypotheses.

As OAAS moves forward with this initiative, we will refine our Mortality Review process as well as improve our ability to intervene to address patterns and trends in service-related deaths. We plan to continue to monitor deaths and outcomes to evaluate the effectiveness of providers, programs, and policies. Finally, we all have an obligation to report abuse, neglect, and exploitation as well as suspicious deaths of older people and persons with disabilities by calling 1 (800) 898-4910.

RESOURCES

The Mortality Review Policy and Procedure can be accessed via the DHH Web site.

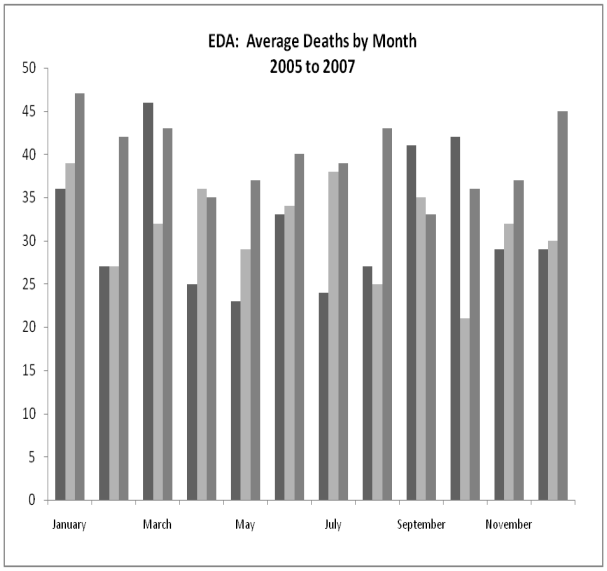
- Compressed Mortality, 1999-2006 http://wonder.cdc.gov/
- NVSS - Mortality Tables are found at: http://www.cdc.gov/nchs/nvss/mortality_tables.htm
- Vital Records and Statistics Louisiana 2007 Health Report Card http://www.dhh.state.la.us/offices/reports.asp?ID=252&Detail=678 and http://www.dhh.state.la.us/offices/publications/pubs-275/HRC_2007_Full_Book_FINAL_(May_23_2008)[1].pdf

Appendix:

Mortality Counts for Previous Years 2005 to 2007 for EDA and ADHC Waivers

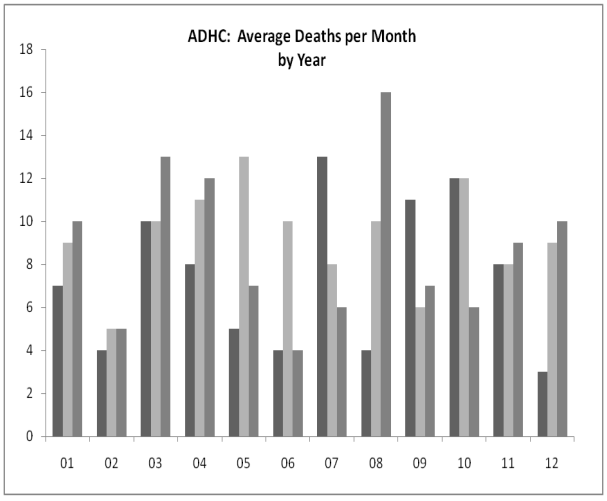
EDA

Month	2005	2006	2007	Average for Month
January	36	39	47	40.7
February	27	27	42	32.0
March	46	32	43	40.3
April	25	36	35	32.0
May	23	29	37	29.7
June	33	34	40	35.7
July	24	38	39	33.7
August	27	25	43	31.7
September	41	35	33	36.3
October	42	21	36	33.0
November	29	32	37	32.7
December	29	30	45	34.7
Grand Total	382	378	477	
Monthly Ave over yr	31.83	31.50	39.75	



ADHC

Month	2005	2006	2007	Ave. for Month
January	7	9	10	8.7
February	4	5	5	4.7
March	10	10	13	11.0
April	8	11	12	10.3
May	5	13	7	8.3
June	4	10	4	6.0
July	13	8	6	9.0
August	4	10	16	10.0
September	11	6	7	8.0
October	12	12	6	10.0
November	8	8	9	8.3
December	3	9	10	7.3
Grand Total	89	111	105	
Monthly Average over Year	7.42	9.25	8.75	

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